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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/522,477

09/29/2005

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07/02/2008

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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

07/02/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |   |  |
|------------------------------|--------------------------------------|---|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/522,477 | <b>Applicant(s)</b><br>NAHMIAS NANNI ET AL. |  |
|                              | <b>Examiner</b><br>Justin R. Fischer | <b>Art Unit</b><br>1791                     |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 48-60,62 and 64-94 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-60,62 and 64-94 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 23, 2008 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 48-60, 62, 64-80, 83-88, and 90-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumiyoshi (JP 2000-086824) and further in view of Exxon Mobil Chemical, Hawley Dictionary (of record), Takeuchi (US 5,498,735, of record), and Avery (US 5,116,523, newly cited).

Sumiyoshi is directed to a tire construction formed of a composition comprising a diene-based rubber, a modified paraffin wax, and an olefin resin, wherein said resin can be Escorez® 1102 (Paragraph 9- see attached translation). Exxon Mobil Chemical has been applied to expressly evidence the C5/C6 makeup of Escorez® 1102 (Page 13- inherent chemical structure). In this instance, though, the references are completely

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silent as to whether the olefin resin system of Sumiyoshi is an alpha olefin resin system. In any event, one of ordinary skill in the art at the time of the invention would have found it obvious to form the olefin of Sumiyoshi as an alpha olefin since it represents one of the most common, if not the most common, forms of an olefin resin. It is noted that Hawley's Dictionary includes a description of an alpha olefin under the definition of "olefin" and Takeuchi recognizes the common use of alpha olefins when forming similar material additives (plasticizers, surface active agents) (Column 1, Lines 5-15). These references clearly suggest that one of ordinary skill in the art at the time of the invention would have found the general language of Sumiyoshi as including alpha olefins. It is emphasized that "alpha olefins" represent one of the most common, if not the most common, structure of olefin resins and applicant has not provided a conclusive showing of unexpected results to establish a criticality.

With further respect to the independent claims, it is noted that the reference is broadly directed to the use of a hydrocarbon resin (olefin) to function as a tackifier. Although not expressly disclosed by Sumiyoshi, such hydrocarbon resins and additional resins are commonly described as being substituted or unsubstituted, branched or unbranched, and being saturated or having at least one degree of unsaturation. One of ordinary skill in the art at the time of the invention would have found it obvious to use a wide variety of hydrocarbon resins in the rubber composition of Sumiyoshi, including those that satisfy the broad range of parameters required by the claimed invention. It is emphasized that the claimed limitations in regards to branching, saturation, and cyclic moieties are consistent with the well known and conventional manner in which

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hydrocarbon resins are described and applicant has not provided a conclusive showing of unexpected results to establish a criticality for any of the claimed formulations, as shown for example by Avery (Column 5, Lines 4+). In this instance, Avery suggests a branching ratio below 0.19 in order to optimize the lubricating properties of the respective polyolefin and such a benefit is applicable to tire rubber compositions (lubricants are commonly included in tire rubber compositions for such a benefit). It is further noted that the disclosed branching ratio below 0.19 is fully encompassed within the branching ratio detailed by the claimed invention (below 0.25). Lastly, it is noted that Table 1 simply compares a composition devoid of polymer (c) and a composition having polymer (c)- these results do not establish a criticality for the specific use of any one type of hydrocarbon resin.

Regarding claim 49, the reference (Sumiyoshi) further teaches a loading for the wax between 0.5 and 10 phr (based on base rubber) and a loading for the olefin resin between 1 and 10 phr (based on base rubber). Using these values, the amount of olefin resin can vary between 0.1 and 20 times that of the wax, which fully encompasses the range of the claimed invention. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the composition of Sumiyoshi with the claimed quantitative relationship since the reference describes a plurality of embodiments that satisfy the broad range of the claimed invention.

With respect to claims 49, 83-87, 92, and 93, the claimed tire materials are consistent with those conventionally used tire compositions. It is further noted that the

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compositions of Sumiyoshi are described as being usable in tire and having a high degree of ozone resistance- such language is commonly used when describing tire components that are exposed to the environment, such as the tread and the sidewall. As such, one of ordinary skill in the art at the time of the invention would have found it obvious to form the sidewall and/or tread of Sumiyoshi from the above noted composition. Lastly, the claimed materials are consistent with those commonly used to manufacture sidewalls and/or treads.

As to claims 51-55, Escorez ® 1102 has a number average molecular weight of approximately 890 (Page 26- inherent property of Escorez ® 1102).

With respect to claims 56-58, Escorez ® 1102 has a polydispersity index of 2.7 (Page 26- inherent property of Escorez ® 1102).

Regarding claims 59 and 60, Escorez ® 1102 has a softening point of 100 °C (Page 26- inherent property of Escorez ® 1102).

As to claims 62, 64-68, 71, and 72, Sumiyoshi generally teaches a tire rubber composition including a petroleum hydrocarbon resin at a loading between 1 and 10 phr.

With respect to claims 67 and 68, the claims as currently drafted do not require branching of quaternary carbon atoms (lower end of range is 0 percent).

Regarding claims 69 and 70, it is well recognized that higher degrees of crystallinity are associated with higher softening points. In this instance, Escorez ® 1102 has a relatively high softening point and as such, one of ordinary skill in the art at the time of the invention would have expected the hydrocarbon resin to demonstrate a

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crystallinity in accordance to the broad range of the claimed invention. It is further noted that Sumiyoshi is more broadly directed to the general class of petroleum hydrocarbon resins and such a disclosure would include a wide variety of resins having crystallinities in accordance to the broad range of the claimed invention.

With respect to claims 75-78 and 90, the modified paraffin wax of Sumiyoshi contains a lower molecular weight fraction B1 and a high molecular weight fraction B2. In this instance, (a) the lower molecular weight fraction is formed of compounds having between 24 and 29 carbon atoms and has a branched hydrocarbon content between 10 and 15 weight percent and (b) the higher molecular weight fraction is formed of compounds having between 32 and 38 carbon atoms and has a branched hydrocarbon content between 18 and 25 weight percent. This language suggests a linear saturated hydrocarbon content that satisfies the broad ranges of the claimed invention (between 85 and 90 weight percent of B1 is linear saturated hydrocarbon having 24-29 carbon atoms and between 75 and 82 weight percent of B2 is linear saturated hydrocarbon having 32-38 carbon atoms).

As to claims 79 and 80, the composition of Sumiyoshi includes paraffin wax (modified) at a loading between 0.5 and 10 phr, which fully encompasses the broad range of the claimed invention.

4. Claims 81, 82, and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumiyoshi, Exxon Mobil Chemical, Hawley's Dictionary, Takeuchi, and Avery as applied in claims 48 and 88 above and further in view of Jorgensen (US 4,207,218, of record). While Sumiyoshi is silent as to the specific base rubber

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component, the claimed values for the glass transition temperature are consistent with the values associated with common rubber formulations, as shown for example by Jorgensen (Column 2, Lines 15-45). It is emphasized that several of the disclosed rubbers are well recognized as being used in the tire industry. One of ordinary skill in the art at the time of the invention would have found it obvious to form the base rubber of Sumiyoshi from a material having a glass transition temperature below 20 degrees Celsius.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 48-60, 62, and 64-94 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's primary argument centers on the lack of evidence to support the examiner's position in regards to the claimed branching characteristics. The examiner has provided evidence in the form of Avery, which specifically suggests a branching ratio (methyl/methylene) below 0.19 to provide high lubricating properties- such a disclosure is fully encompassed by the claimed branching ratio of 0.25 and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed branching characteristics.

Lastly, it is noted that applicant acknowledges the fact that hydrocarbons are often characterized as branched, linear, substituted, and/or unsubstituted; however, applicant further contends that there is no evidence of record or any indication in the knowledge of one of ordinary skill that hydrocarbon resins necessarily have the claimed degree of branching. It is agreed that the claimed branching characteristics are not



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inherent to hydrocarbon resins; however, Avery has been cited to recognize the branching characteristics commonly associated with similar olefin polymers. In this instance, one of ordinary skill in the art at the time of the invention would have been amply motivated to include the claimed branching characteristics since high lubricating properties are desired in tire rubber compositions (lubricant additives are commonly included in tire rubber compositions).

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer  
/Justin R Fischer/  
Primary Examiner, Art Unit 1791